provided in SEQ ID NO: 32, and is shown in FIG. 11. In another embodiment, the present invention provides a luciferase reporter construct driven by MUC5B sequences -1098 to +7, relative to the site of transcription initiation (*i.e.*, the MUB5B-b1 reporter construct). This promoter sequence is provided in SEQ ID NO: 31, and is shown in FIG. 10.--

REMARKS

All amendments to the Specification, including the replacement FIGURES, are to correct typographical and clerical errors. Amendment to FIGURES 10, 11 and 12 are to correct clerical errors in depiction of the termini of the nucleotide sequences. Evidence in support of these corrections is found in the Specification in TABLE 3 on page 67, which provides the correct termini positions for the nucleotide sequences provided in FIGS. 10, 11 and 12, in TABLE 2 on page 64, which provides the correct terminal nucleotide sequences in the PL1, PU2, PU1, PiL1 and PiU1 PCR primers, in FIGS. 6A-6H and 8, which together provide the complete MUC5B genomic sequence indicating the transcription start site (+1).

Amendment to the numbering of the views in FIGURES 6 and 11 are made in accordance with 37 C.F.R. § 1.84(u)(1), which requires that a single drawing consisting of multiple sheets be indicated by a number followed by a capital letter. In accordance with 37 C.F.R. § 1.121(d), marked-up copies of the originally filed drawings showing the proposed changes in FIGURES 6 and 10-12 are attached. Amendment to paragraphs **30** and **35** are made to reflect the corrected numbering of the FIGURE views.

Support for the amendment to paragraph **149** on page 46 is found in TABLE 3 on page 67, where the correct SEQ ID NOs are shown.

None of the amendments to the Specification, including the Drawings, constitute new matter.

SUMMARY

Applicants respectfully request entry of the above Amendment. Please charge any additional fees, including any fees for extension of time, or credit overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

Appl. No.   :   09/990,613
Filed   :   November 21, 2001

Attached hereto at the APPENDIX is a marked-up version of the paragraph in the specification indicating the changes made to the paragraph by the current amendment. The attached APPENDIX is captioned **"Version with markings to show changes made."**
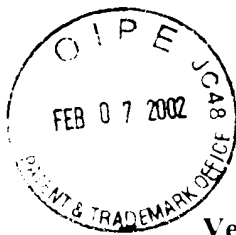
Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: _____   By: _____
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(415) 954-4114

APPENDIX I

<u>Version with markings to show changes made</u>

Deleted text is shown with strikethrough and added text is shown with underlining.

<u>IN THE SPECIFICATION</u>:

Paragraph number **30** on page 9 been amended as follows:

--**[0030]** ~~FIG. 6~~ FIGS. 6A-6H ~~shows~~ <u>show</u> 22,773 basepairs of human *MUC5B* genomic region isolated and sequenced from the Cos-1 genomic cosmid clone. This 22.7 kB encompasses 4169 basepairs of sequence upstream of the transcription start site, the 5'-UT and the 30 exons/introns upstream of the *MUC5B* large central exon.

Paragraph number **35** on page 10 been amended as follows:

--**[0035]** ~~FIG. 11~~ FIGS. 11A and 11B ~~shows~~ <u>show</u> the *MUC5B* genomic nucleotide sequence encompassing positions -4169 through +7 that were subcloned into the MUC5B-b2 luciferase reporter construct.--

Paragraph number **149** on page 46 been amended as follows:

--**[0149]** The present invention provides *MUC5B* reporter constructs suitable for use in drug screening protocols. In one preferred embodiment, the present invention provides a luciferase reporter construct driven by *MUC5B* sequences –4169 to +7, relative to the site of transcription initiation (*i.e.*, the MUB5B-b2 reporter construct). This promoter sequence is provided in SEQ ID NO: ~~X~~ <u>32</u>, and is shown in FIG. 11. In another embodiment, the present invention provides a luciferase reporter construct driven by MUC5B sequences –1098 to +7, relative to the site of transcription initiation (*i.e.*, the MUB5B-b1 reporter construct). This promoter sequence is provided in SEQ ID NO: ~~X~~ <u>31</u>, and is shown in FIG. 10.--

FIGURE 6A

```
   1 ggtacccctg gttgtgcctg tcgctcagtg ggccagggtc taagggctgt gaagactcaa
  61 catgccccca cctgctactt ctgaacacca ggcactggct ctgagacccc cgggccttgc
 121 tggatatctc cccagtgta ctgggccagg ggacaggggc ctggccatcc caacacccag
 181 gagcaagcag cccgtcacct gcccaggtcc ccgaggcccg gaacaccttc ctgctggcc
 241 caccccagccc tggacctgtc ccgcttggtc acacgatggg accctggcc catcagcagg
 301 tgagccccca ggagcgtgcg tctgcctgg taaggcctcc accccaggag ttggggggcc
 361 cccgtgccag ggagcaggag gctgccgagg tggaggtcc cacacagcta ccactcccta
 421 tcccagcac agcctggggc ctggctctga gtacacatcc tggggcctgg ctctgagcag
 481 accaagagcc catccctgct ttgtgacccc ctgggctgtg cctgacaccc caggtgtcca
 541 gggtggagct ggggcccagc tcagtgcctg ggagctgatg gaccctgggg cccggctcag
 601 tgcctggtgg ctgatggaca ctggggcctg gctcaaacct gcaccgctgt ggtcggggga
 661 ggggagggct gagccacgtg gggaaccag ccccagtgac gactctttgc ggtggccaag
 721 ccctccaggt gtccccagg gctgagggga tgggcttggg ccagctggtg acagcagatg
 781 gtggccctga tcactggtgc ctggacggcc tctgaagggg tctgtggggt cctggacggg
 841 tccccattca tggcaggatt aaccccctc gggttctgtg tggtccaggc cgcccctttg
 901 tctccactgc ccctggcca gaatgaggga cagtgaccca cccaggggctg ggcctggctc
 961 agactccgtc agagccgcag ggcaagttcc tggcacgtcc gagtgggag gctcccctgc
1021 gctccaggag gctgtgcctg gcccccttc ccggcaggaa ccggctgtgt ccctttcctt
1081 cccttatctt ctgtttcag cggcctcaac tgtgaagagg tgaactcttc aaacacgctg
1141 agcaaacagg cccgactccc agggccgcat ccgggatgtc tcaatagctg tggccttgac
1201 gtccacctcg gaccctgcc ccggaccag cccagttccc aatgggccct ctgcccgggg
1261 aggtgcctag tgggagggac gagggcaaag tcggggcccc cacttgtttg gtgtcactgt
1321 gtgccagcgg cccactggcgg gcgaggctgt tccagggtgg aggcggggag ggttggacca
1381 caggcactga gcggggacag aggagctgcc tgaggtccc agctctgcca tggagaaaac
1441 gctatctcgc tgatgcagag gtgcccggcc cactcgagct ggggtgagg gggctgctcc
1501 ccagtgggcc gccagccccc atgaaggccg cggcaccgg ccgtggtcag ggaggggcagg
1561 ggacaggcag tggggccag caggggagac actaggcttg gccccagcac ccaggtgggc
1621 atcggcttgt gagctggagc cgcgggcagg gaggggggat gtcacgaggg cttggctaag
1681 gtgggagacc tgggcgggtg cgtcggggg acgtctgcag cagaggcctg ggcagcaggc
1741 acaccccctcc tgccagtgcg aggaacgagg cgccacagcg gcgggtagcc ccccatttgc
1801 ccagcctggc ctggagcagg caggaaggcc ggggagaggg gtctggctgg ggcctggggtg
1861 cagtcacagc cacgagccca ggggtgggga ctctggccca ccottcagac catgctcaag
1921 gcccactggc ccaggcatgc ccgccacccc ttcacggtg ccgtgctgca gcgggtctac
1981 cggcctggat gtgaaagaga gcttggagac cccagagacc tcggaacctt cagcttgga
2041 agtgacgtcg gtggggtggg tgggggagc acaggctctg gagtcccgga agtgagcggg
2101 gagctacgct gagatctggg agacccctg ccccacccca ggtacaggc caggcagaag
2161 cccgaggtgt gccctgagtt aaagaaaccg tcacaaagaa caaagggaga aggcgggttc
2221 cagcctcac cacagccctc ggctctgag gagccacctg ggggcttcag ccatgagggg
2281 tgacaggtgg caaaacgggc cagctccgtt cacgtcgctg tgcagctgtc tccggccctc
2341 catctccaga acgttctcac attcccaagc tgaaacccctg tccccatgca acaccagctc
2401 accatccct ctgccagccc ctggcgccca ccgtccacac tccgtctctg cgggtttcat
2461 gactccaggg gcagcacacg agtggcccct cctgccttg tcctctgtgt ccacctgct
2521 cactctgcac agtgtcccca gcttccccca tggagcagcc tgggcagcc cctcctttc
2581 acggctgaac cgtattccac cgcacggatc agcctcacga tgctgaccca gtcctccgcc
2641 caggacaca tgggcagctt ctgccctttg tcagtgatgc tgctgtggac atgggtgtgc
2701 aaatgtccct caggacccgc cttcagttct tctggggaca gaccagagt ggagttgctg
2761 gtcacccca ccagcagggc acagggctcc gggtcccac gtctctgcca acattccta
2821 cttcctgtgt ttcttgatcc ccgccatcct attgagcgtg agacaggtca gaagctttga
2881 agatgggctt tcgtcttgtc ccagaaatcc cacctctaag aatttaactt cagaaagaca
2941 aacgcgggg agtggtgca gggcccgtga cggggactgt gacgtaaata aaacaacaga
3001 cctggacacc accctagggt ccccatgggg ccggacgagg ccacaccacc cgacctggtg
3061 cttcctgcct ggcgtctgcg ccaggagca ttcaggacgc tggtgaccag ggagccagga
3121 ggtgggagca tctgaggtgc aggtcacacg ggcaggaggt gtttgcaaga ggtattgcag
```

FIGURE 6B

```
3191  cgcggacgga gtgtcctgca gatgacgctg tctgtcctgt agatgacgct cgtcaaggag
3241  gtttaccaca tagccccggg gaagcccacc caacaccagc cggaggtgct aggcttctgc
3301  ggctcccacc tggggcaggc ggaggacccc gggcaggtcc aggacccccc ggagcagctg
3361  cttcctcaac cctgccaggg ttaatgagga ggcccagag tgaggtggag gccaaatggg
3421  actcaggcc ggagcctctg gcctggctgg atcaggctg gcattggaca agcgcagctg
3481  actccgatg tgcatggcca ggagacactc tgggcctcag tttccccttg aatgtgaacc
3541  ttgaaacaga tcagcccaga gacctcccac ggtcttcaag gggctctggt cagctggct
3601  ggggtctctg gaaatagagc ctcctccagg gacccccaca agccacccag actgagcatc
3661  ctggccatgt gcatgcctga gctcagcagg agcctgccgg gctccccgtg ggctaagcag
3721  tggtgggagg ggagctccag cctcgtgggc cctgcccggg cctggggac ccatggtcag
3781  tggctggggg tgctgcccag aggctggat tccttccag caggagcgc agtggggctg
3841  agtgtgaggc aggctggctg accactgttt ccatggaccc tgcgtccaag gccagccctg
3901  cctccagcg gctttgccat ctaggacggg tgccaggtgg ggtaggcct tctctcctt
3901  ccgattctca gaagctgctg ggggtggggg cgtcctgggc ctcagggcac agagctgcaa
4021  atccttcctg atccaggcct ctcccctgcc acagccctc cccgagagca aacacacgtg
4081  gctggagcgg ggaagagcac ggtgccctgc gtggcctggc ctggcttggg gccaaggctc
4141  cctgctacat aagctggggc ccccaggga gcaagcaccc ggccggctc cctcctgcc
4201  cgtccccgtc ccccacccg tgccagcccc caggatgggt gccccgagcg cgtgccggac
4261  gctggtgttg gctctggcgg ccatgctcgt ggtgccgcag gcaggtaaga gccccccact
4321  ccgcccctc tcgatgctgt cttcacggcg ggggtctctg caggtcgctt gcctgggagc
4381  ttctcctgca gagtgcacgg gcagatcccc ctacgactcc ctgagtgtcc tggatgggac
4441  cctacccgtc cccaacacag ggctctgggg cccacggggc tcacagtgtc aggaaactca
4501  ggggctggct tggatggggt gtccaggaga aggtgggccc ctgaccgcag ggcaaggccc
4561  ctgggagacc accgaaaggg tcttggtctt ggggtggga caggagtggg caatgggga
4621  ggggtcaca gctgggggtc tctctggagc cccatgaggc ccaggcatca gagtgagcag
4681  gggcaggctt agcgtggacc cctgtccagg accggctcta ccttcacga cctccctggg
4741  gatcacagct ggcaggcag gtgagggtac ccgggaccct caagggctgc acagccagcc
4801  gcaagagccc cggcctcaac ccacgctcga ctcccacggc ccatctgtgg gcatctcatg
4861  ccgcacgggc tgcctggctc tcagccgagc gttttccctc gtctgctgtc tcttggccag
4921  agccgcagca ttaatactta ctgtcaatag agaaagatgc agcccccaggg gccacaggga
4981  gacacccagc caggctggcc atgaggctgc tgcagccct ccctgccccg ccctccgccc
5041  cctcccaagc ttggggtctg ggctgggcag gtgaggttcc ctggggtctc tctccatctg
5101  tggaagggag gctgggtggt cagcagggct ggaggcaggg ggcttcccc agtggctccc
5161  agcctggcc cggggggagc tgcgtctggc tgcaaggttt ggggggctggt ttgaccagaa
5221  tagccacctc cttgcatctg attcttccgg gccatgcagc cttggctccc ctcacctgag
5281  caggcaggcc ctagggactc tcagcccacc cgtcctcctg tcctccaggc acgtccaagt
5341  tggggagatc aagcccttgg caggggactgt gctttagtca ccagatgcac gtcctgtggc
5401  cggggaaggc agccctgcac agagcagctt cctgttaggg gacacacccc aaagtgatgg
5461  ggtggctggt ggtgggcact tctctggcta caagatggag gcccaggtgg tccagcccaa
5521  ggagggcact gcacggagca gataaccaag ggcagtcagc ctggcagggg gagggggctgc
5581  ctgggggga ggggttgcct gggttgggga ggggctgtct ggggcagggg aggagctgcc
5641  tggggcgggg gagggggctgt agggccaggg aggggctgcc tggggctggg gaggggctgc
5701  tggggtgggg aggggctgcc tgcggcggga gccggggcgt gggagtggct ggtgggctg
5761  gcacacaggg gcagggctgt gagctgtggg tggggtgga ggactcaggg atcggctggc
5821  tttctgggaa aggcagtcaa cctggatctc tggaggcggc ccctgtggtg gttcccagat
5881  gtcagcagga cctggctgga aaagccaggc agggcaggc cagagtgcga accacagggc
5941  cggcccctcg ctgagcctg accatgcttg tggggctgg ggcctcacct cccacctccc
6001  cacagagagt ctcagatcag gatccaggga ggagctctgg ggtcctgtga aggggcgcc
6061  ccaacccaaa ctggcagac aatggccggg ggtcctcaga gtcctgtggg ttggagctgc
6121  ctcctcccag cctccatggg gttggtgggt gaggccttgc ccggaggcgg tggtcagcct
6181  ggggacctt gggcggccat cccagtatca acggcacac agcttgcgcg gcccagagtc
6241  ctgcccccag cctgccccac tcgcctgac ttaggatcta gttcgaaact ggttctgtgt
6301  ttaggtttct gctaagtcac gcctggaagg ctccaagtgt gtcctcctaa caaagctggt
```

FIGURE 6C

```
6361 ctttgtcctt ctccaaggga tgtgtgggat ggggcgaaat ccccccttgg ggcggcaac
6421 gccttttcct gattccattt tctcccccat cccttgagaa ggaggcacca tccccgcctg
6481 tcagtcgggg acaggccagg ccgtgctggg ggcagctcag ggctccctgc tggaagcttc
6541 catccggcag gcttccata gcattgagca ggagcggagg catctgcggc tgacggttgg
6601 ggtggcctga gcggctgggg aggagtcccg gccttggcca cagtgtgtcg tgagggtgaa
6661 cctgcagggc atggagaccg ccaccaagga cccacatgcc ggctgccgca ccagggatgt
6721 ggccaggtcc gtggttgggt tcgtggctgg cagcacatc tagttcctca ctgactccca
6781 ttccctcttc ccacagagac ccaggccct gtggagccga gctgggggaa tgcagggcac
6841 accatggatg gcgggtatgtg gccaggttcg ggggtggggg gttcctgacc aggctggagg
6901 ggctggaatt tggggctgggg caggcagacg cctctccaag cagccatgcg tctgacagag
6961 accctcctg ggtcccctgc ccaggacaat acccagcacc cgaggcggag cttggtgctc
7021 caaagaagag gaaagtgcag agcagagaga catgcacaca gaagcacacg cgtggacagg
7081 cacatgcgtg cccacactta cactggcaca cacatgtgtg cacacacagg ccaaaacaca
7141 agggcagcag tgttgtgggg gcagacaggg ccaagggtaa aggggctgcc ctggcccag
7201 cccatcagtt ttgggctccc cttcaactct ggtggctggc gaggagggtg ggccccgggg
7261 agggtgtctc tgcttcccct tcctggccac gttcctgggg tgaccagcct tcacccacag
7321 gtgcccgac gtcctcgccc accggcgcg tgagcttgt tccacccgtc actgtcttcc
7381 ccagcctgag ccgtaagcag atgctgcccc tgccagccgg gaaggggtg tttgccagtc
7441 ccaaaggtgg gggcccagat ctaggggtgc agctgccacc aggtggggcc gttgggccag
7501 accagagtc ctccgtgtgg gcggtctcct ggtcactggc cacccctgggg gatggggacg
7561 ggtcagggt cttggagcaa aacagacgca gtccagggtg agccaggcag ggcacagcca
7621 gcagccgacc atgggctttt ccattccaaa aaccagggtg cctcggccca ggggaggcta
7681 ccccgtgggg ggctggcatg gggatgggcc tcatcccgcg ctccccacag ccctgaaccc
7741 ggcgcacaat gggcgggtgt gcagcacctg gggtgacttc cactacaaga ccttcgacgg
7801 cgacgtcttc cgcttccctg gcctttgcaa ctacgtgttc tctgagcact gccgcgccgc
7861 ctacgaggac ttcaacgtcc agctacgccg aggcctagtg ggctccaggc ctgtggtcac
7921 ccgtgttgtc atcaagcccc aggggctggt gctgaaggcg tccaacggcc ccgtcctcat
7981 caatgggcag cggtgagccg gccaccctgg ggaggggcga gggccgggcc acacagtgtg
8041 acctccccac acggccatgt ctgacctggg ccaggctgg ggtgggttg ggtgggcagg
8101 cagccaggag agcggggccc agggagagac cccgctgtct ggcagggag gagctgcctc
8161 acagccgcac tggcctcctg gtggagcaga gcggggacta catcaaggtc agcatccggc
8221 tggtgctgac attcctgtgg aacggagagg acagtgccct ggtgaggaag cccctcgcc
8281 cctgcccct tcaggcctgg ccacaaaacc cccacccgggg gtcgagggat gcctccctgg
8341 gcttggggtc acggggcttg gggcatgttg ccagtggggg gatcagaggt cctgaggctg
8401 gagctgcccc tccccactct cagctggagc tggatcccaa atacgccaac cagacctgtg
8461 gcctgtgtgg ggacttcaac ggcctcccgg ccttcaacga gttctatgcc cacagtgagt
8521 gccacctggg tgaggggcg gtgaccaatt atgtcggcca acgaagagcc acagtcccgg
8581 ggaggccggg aggggcgga gtgggggaccg ggcaccaggc agggaggggc cacgaggact
8641 gtgccctaca tggtgggagg agtgcccctc gggggtgttg ggccctaggc aggagtgggga
8701 gtcctctggc ctgggctcag gaagtgggag cccatatctt gtcccaggga gcccctcaga
8761 gccaccacac ccctgcttc ttcccggcag acgccaggct gacccgctc cagtttggga
8821 acctgcagaa gttggatggg cccacagagc agtgcccgga cccgctgccc ttgccggccg
8881 gcaactgcac ggacgaggtg agtcccccgc caccccagc tcctgggcag ggacggcctc
8941 caggtccagg gggagctggg ccgaggtctg aggaatgttc ccagctggtg gagagatggt
9001 gccattggag ggaggccggg cagccaccct ctgtgtgctc agtccacgg tacacactgt
9061 ccgagtgtgg tgacgtgcgt gttcatcagg ccagcgtgt gcccatctgt gtgagcaaac
9121 acaggcccat gctgcacagg ctgggctgag ggtgggcact cgggaagccc ggagccagcc
9181 cttcccacca gcaggtggac tcagaagggg cctggaggct ccaggatccc caaaccagca
9241 ggatctctga gccttaaatt gtgctgtgaa tgacagcatg agcccctg tgagctgggc
9301 cccgcagccg gcagccctgg gcctggggac ggaggacact cagcactgga ctgccctgaa
9361 cctgccggc tgcccagaga ggcggggcct ccacctcccc tccttggctc cgcctcctgg
9421 ggtgggggtc tgcacctttc ttgggcgctt actccacggg caggcacatc cggagtaggg
```

FIGURE 6D

```
 9481 gatcccgggt tgacgggtca ctccccaagg gccaagcaga gctctgcatg gccacagtgg
 9541 gtggaagggg tggggctggg tacaaggaac cccgacaggg agagggcttc ccggcctggc
 9601 ctgccatggg tcctattcca gcaccgtggc agcccccatg gatggcaggg gtgcccagcc
 9661 tggcccactg tgctccccag gagggcatct gccaccgcac cctgctgggg ccggcctttg
 9721 cggagtgcca cgcactggtg gacagcactg cgtacctggc cgcctgcgcc caggacctgt
 9781 gccggctgcc cacctgcccg tgtgccacct tcgtggaata ctcacgccag tgcgcccacg
 9841 cgggggcca gccgcggaac tggaggtgcc ctgagctctg ccgtgagtgc tcccaggggcc
 9901 ttcgccaggg attgtgccag agagaaggggg caggggagc gccttggggg ccactggggg
 9961 tggggaggcc tggggacagg gggtggaggg cagaggaccc acccaggca tagtgggcag
10021 aggccacccc aggacccag gagggggtgg ggccgccggg ggctgcaggg gaaggagagg
10081 cttgtggaga ggcttgtgca gcaggtggca gggctgggg ctggagggtg tagctgccca
10141 cgatgagggg cgtcagggcc accctgggc ctagctctgg cttctgtgga cttgatggca
10201 tgtggaaggc cgtggaaggc ggctggggct gaccacacgg gcagtacagg gcccttcccc
10261 tggcccagcc ccgcctcctt ttgcgcagcc cggacctgcc ccctcaacat gcagcaccag
10321 gagtgtggct cacctgcac ggacacctgc tccaacccc agcgcgcgca gctctgcgag
10381 gaccactgtg tggacggctg cttctgcccc ccaggcagtg cttgtgtgcc ctgaacccct
10441 caggggcctt tcaggtcct gctcccaacc ccgcccag cctcatcagg cctggaagca
10501 gagccctca tgccagaagg tcccaccaga gggcccaggg tgggaaggcc actggctggg
10561 agggtgctgg aagacctgcc gatgcgtgga gggaggtaga gcagtgccat gagccagctg
10621 ggcatggtgg ggaaactgag gcccagaggt gcttggtgtt catccaagcg agtgcagctc
10681 agggcggggg cagtgcctg gagcaggaat tcctcccaa gggaggcagc ttgtcccaa
10741 ggccggtgtc ttctgacctt ggtgtccccc gtgcatgggc cggccctgcc tcacgccgcg
10801 ccccacaggc acggtgctgg atgacatcac gcactctggc tgcctgcccc tcgggcagtg
10861 ccctgcacc cacggcggcc ggcacctacag cccggccacc tccttcaaca ccacctgcag
10921 ctcctggtac ttatgagccc accagcctcc gcctggggtg gggtgtggag ctcctggtat
10981 ttatgaaccc gccagcctct gcctggggtg ggggtgtgga gctcctggtg tgcacccacc
11041 agcctccgcc tgcggtgggg gtgtggaggg tggggcccac ctcctcccga catgccggtt
11101 ctgctcacgg cctccctccc cagcacctgc tccggggggc tatggcagtg ccaggacctg
11161 ccgtgccctg gcacctgctc tgtgcagggc ggggccaca tctccacctg tgatgagaaa
11221 ctctacgacc tgcatggtga ctgcagctac gctctgtcca aggtctgggc ctggggccgg
11281 gtcttcagac acccagaccc tcctgggacc ctcatgccac ttccacccag gggaggcccc
11341 cacgatggtc atagaggggt ggatgtccct gctgaggggg gagccctggg tccccatgat
11401 ggtcatagag ggatggctct ccctgctgag cggcatgggg ccaaggagcc cccaggccct
11461 gagacaagct gctgggaggt gaccagaggt gccaaggacc acctccccac agagccacat
11521 cccccacatg ggcatcccca gcacacttct gggggggcacc ccacatcatc gagccaggcc
11581 caatgcacgc gtgggtcctt ctccccagaa atgtgccgac agcagcttca ccgtgctggc
11641 tgagctgcgg aagtgcgggc tgacggacaa cgagaactgc ctgaaagcgg tgacgctcag
11701 cctggacggc ggggacacgg tgaggacctg gctggggccc tgggctggga caggaagagg
11761 catgcgaagg cgtgtgggga gcaagcacgg tcaggtcccc ctccagcccc gaggccaggt
11821 cccccctcca gcccccaggc caggtcccct ccagccccc aggtcaggtc cccctccag
11881 ccctgaggtc aggtcctcc ggggggcaa ttgcagagcc cacgcaggt ccaggcctga
11941 gcttctctgt gggctctgtc cccagtgggg gcccctgggc aggcacccc ctcatttgag
12001 agtcgggaat gggttcctcc ccagagctga cctcccgccc gcctccttcc gcaggccatc
12061 cgggtccaag cggacggcgg cgtgttcctc aactccatct acacgcagct gcccctgtcg
12121 gcaggtatgt ggctctccca ggacggccgg gctgggtggc gcctgcttgc aggggcagct
12181 cccacagcct gggcagcgtc cgctccatcc ctgctagttc ccgtggcct cgggcagctc
12241 caggagctcc ctgtgctggg tttctcgtct gcagagtggg gatgccaggc tccacccg
12301 gcagcggcag ggacccacaa tccagctcgc tcagcccac tctctcaggg agcccggtct
12361 ccacctgagc ccacttggcg gccacaggca tgggacaggg agcctgaggg ctcctggcca
12421 ctcctgggtc tcactcccgg gtctcagtgg ggtggcccgg cccactggat gccctgcccc
12481 tccaatctag ccagatctgt ccctgcaccc ctgacggcc tctccccac actcccggca
12541 gccaacatca ccctgttcac acccctcgagc ttcttcatcg tggtgcagac aggcctcggg
```

FIGURE 6E

```
12601 ctgcagctgc tggtgcagct ggtgccactc atgcaggtgt ttgtcaggct ggaccccgcc
12661 caccagggcc agatgtgcgg tgaggctggg caggggcctt cggggacagg gccattgggg
12721 acggggcctg gactagcgcc aggctgcagg gaggggcagg cagaggcggg caggggaccg
12781 gggagggggc tgcccccagg gcatggcgga gatcctggtg ccagcgcagg acaccagcat
12841 tggaccagcg gcccaggaag cagccagctg ggaggatgga gggggcagcc ctgcctggc
12901 tcaggccgac tttgcacagg ggctggcttt gcacaggggc cgactgcaca gggggcgcccc
12961 ccgccagggc ttatctgcag agggttctgg gagcagaatc ctgggacagg gctccagcc
13021 gttctaccct gtgtggtgcc tggaggatg gcaggggcca ggaccaggt gggccaaca
13081 gtggccgctg acatcccca acctggccc ccaggcctgt gtggaactt caaccagaac
13141 caggctgacg acttcacggc cctcagcggg gtggtggagg ccaggggcgc agccttcgcc
13201 aacacctgga aggccaggc tgcctgtgcc aatgccagga acagctttga ggaccctgc
13261 tccctcagtg tggagaatgg cactcctcgc cccacccc acagtcaccc caggctcaag
13321 tcccacccag cacttcctg tcccctgggc cacgggacc cctgggtggg attgggacc
13381 ccatggaggc aggtgggagg catcaggagg aggtgcttgg ggccaggcgg ccagaaccc
13441 ccaaggcgca gcaggtgagc cgcaaattcc aactcactgt tcccccgggct gaggggtcg
13501 caggcctgcg tgtcagggt gtgggcttcg gggcagggcg tggagatgag gtcaggtctt
13561 cccacagag aactacgccc ggcactggtg ctcgcgcctg acggatccca acagtgcctt
13621 ctgcgctgc cactccatca tcaacccaa gccttccac tggtgagag gctgaggcca
13681 gaccccacg cctgggcagg atgggtgggg gagccctggc aggctggggt cctgacgcc
13741 ccgacgcctc ccacctcggc agaactgcat gtttgacacc tgcaactgtg agcggagcga
13801 ggactgcctg tgcgccgcgc tgtccctcta cgtgcacgcc tgtgcccgcca agggcgtaca
13861 gctcagcgac tggagggacg gcgtctgcag tgagtgccca cgctgggggt gggatgtgtc
13921 cacacgcgt ggggtgcgg gggaccctgg ccggcagcag ccgtcactca cacggttcctc
13981 agcccagagc tttgcaacttc ctcatcccag cctgcaaga acctcatgcc cttgcgatcc
14041 ccacgtcaca gacggggatg ctgagttgaa gatggggct ggccaggctg ctggccgct
14101 gacctgtccc ccctggcccc acggaccaca gccaagtaca tgcagaactg ccccaagtcc
14161 cagcgctacg cctacgtggt ggatgcctgc cagcccactt gccgcggcct gagtgaggcc
14221 gacgtcacct gcagcgtttc cttcgtgcct gtggacggct gcacctgccc cgcgggcacc
14281 ttcctcaatg acgcgggcgc ctgtgtgccc gcccaggagt gcccctgcta cgctcacggc
14341 accgtgctgg ctcctggaga ggtggtgcac gacgagggcg ccgtgtggta agggtctggg
14401 gggaaagcag gcccccagg tgctcctcag agccacttcc cgcctcccc gaaggcttct
14461 gtgcctcccc ccgagggttc tgagacacga ggggccaggc tggggagagt ggggcagggt
14521 ggacccagca cattctgaag agaaaattcc cagctgggaa agaggccagg agaggaggtg
14581 gccctgggag gacacctgct ggctgttctc agctgggtcc acatggcagc cctgccagg
14641 aaaggtgggt ggcccccact cccacccctgg gctcaaaggc cgctcctaac cccagggtcc
14701 tggctgcttt gctgccccc tgtgtgtatt taccatgtg cctccagggg atttgggggc
14761 tcccagcaaa cacagcagca ggcacgtct ggccttacaa ggaggtggcc aggctgggga
14821 ggcccagcat tcggcggggg ctggaagcc cggggtggg gtctgcgggg tgaggggcgc
14881 agatccaggc tgtgccgtct gtctcttgta gttcatgtac gggtgggaag ctaagctgcc
14941 tggagcctc tctgcagaaa agcacaggta agtgccaccc ctgcctgcc ctgccccgcc
15001 ccgcatcacc ccgcctggcc tggccccaac agcccccacc ctgccccacc ccacctgaac
15061 cctgccgggc caggtcagtc ctcacctggg ctctgccaca ggcacccatg cctgacacg
15121 ccaggacgg agggccagt gggtctctgc ccgcagtgt ggcggggtg tcctggggtt
15181 ggggctgca ggtgtcatgg aagctttggc tcgggggctg ttaacttgat cagcaggaca
15241 ggctcagggc tgcctgggt cagttgaggg ccgtggctgc cctcccag gaccccctcc
15301 accaagctct gtccccaggg tgtgcagccc ccatggtgta cctggactgc agcaacagct
15361 cggcgggcac ccctgggcc gagtgcctcc ggagctgcca cacgctggac gtgggctgtg
15421 tgagttccat gcttcaggga ggggtgggca gggaaggggt cccagctttc ccagctcccg
15481 agcccaggga tctggtggtc ctggagacac ttaccacct ggaagctccg ccctggcca
15541 tgcgttgccc tgggtgctgc tgggtgcgcc tgtcccagag ggtgagtgac atctgcccac
15601 cctggtgtcc agccctgacc ggtacctgcc tggcccccac agttcagcac acactgcgtg
15661 tccgctgtg tctgtccccc ggggctggtg tcggatggga gtgggggctg cattgccgag
```

FIGURE 6F

```
15721 gaggactgcc cctgtgtgca caacgaggcc acctacaagc ctggagagac catcagggtc
15781 gactgcaaca cctggtgggt cgtgagtctc tcggaggcag caggtgggga gggcggggc
15841 ggggagggca gcgggtgggg aggcagcggg caggcgaggcc aggggcggg gaggcaggg
15901 ggccagctgg ccaggtgag gtggggccgt ggcaggagag agagttgcta ggaaagccat
15961 gggccgtcct gtggctcctc tggaaggtgg cccagggcc atggtgctac caggagcctg
16021 gtggggctgc gtgccctgca ttcacagtgg gggacaccac ttcttccacg gaggaggggt
16081 caggctgggc ctggggaggc tgaggccccg tgctgacctg cacaggcctg ggtgccgggt
16141 ctcaggaagg ccgggagagc aggccctgt gagcaggcac cattgtggcc ccttgcagca
16201 cctgcaggaa ccggaggtgg gagtgcagcc accggctctg cctgggcacc tgcgtggcct
16261 acggggatgg ccacttcatc acctttgatg gcgatcgcta cagctttgaa ggcagctgcg
16321 agtacatctt ggcccaggta ggcgcgcccc tcgcccactc ctgcaggccg ggcacactcc
16381 agcccgcggc cagcagcttg tctctttctg gcccaggact actgtgggga caacaccacc
16441 cacgggacct tccgcatcgt caccgagaac atccctgtg ggaccacgg caccacctgc
16501 tccaaggcca tcaagctctt cgtggaggtg agaacggccc cagctgtgag caccccgac
16561 cctgcagcca acgagccggc ccccagggaa gcttcgtgag gcttcagctg caccacagg
16621 ttctcagcag tgtcctggcc ccgggctgct gttccaagca gccacaaacc agggggctta
16681 gacaacagaa atgcattctc agtcctggag ccggaagtca gagatccagg cgggcagggc
16741 cacactccct gtcgagggtc tggggaggtc cttcctgcct ctcccagctt cacaggcggc
16801 aggcgtccct gggctgtggc tgcctgtggc ctcccgctgt gtctgcgtct gtcttctctc
16861 tgtttttctc ttctgtctct tgtaaggaca ctggtcattg gattaggggc cccccccgc
16921 ccccacgtag tccaggatga tctccattca agatgcttca cttaatcccg tctgcagaga
16981 tgctttctcc cagtgagggc ccgggctgag gttctgggag ttggcatgtg gacaggcatt
17041 ttcaggagcc acgattcacc ctgccacacc tagagacacc cactccagca aagggggggc
17101 agagctccca ggggataaag cagcgccgct ggcggggatg cctcctgcag atggcgggag
17161 gggctgagga ccgcagcggg tcaggggagg ctggtgtgag ggcgtggggg ctgcagggct
17221 ggatggggag cagggtgggg tggagtgggc ctactcagc ctctgctgct cccgtgcagc
17281 cccaaggttc ccaggcagcc cctgttccca gcacttcctg gccagcctct tgccaaacct
17341 tcactgaggg tctcacggac ccagctcacc cctaacgcca gccgcttgtg ctaagagccc
17401 gtgcgcacct gcagagcact gggtgggca tccctgggtc tcaggccct ccctgggggc
17461 cacaggggtcg gcttccggca gcgtctgcct ccctgcaga gctacgagct gatcctccaa
17521 gaggggacct ttaaggcggt ggcgagaggg ccgggtgggg acccaccta caagatacgc
17581 tacatgggga tcttcctggt catcgagacc cacgggatgg ccgtgccctg ggaccggaag
17641 accagccgtgt tcatccgact gcaccaggac tacaaggtga gctcgggccg tgcactccta
17701 ggccctgcag gacctctca cagtgacaga aaccctggtg ccaggtgggg cctgtgggac
17761 tcgctgaccc gtgggtgcgt gagcctggct ggtgagggcc ctgcctgtgg cctccacagt
17821 gggcagagga ttttgcaggg aagcaggtgc caccagcgg cccaccagg gaccccactgc
17881 acacctgtct cctacaagtt caccaggcac tgcctgggga acggctgcc ctccctccat
17941 ccccgagggg ctctggagcc cagggtgggc tctgtgctgc ctcccacggg tgcctgtggc
18001 cccagctcca gggcccact ctctcgctgc ctctgcaggg caggtctgc ggcctgtgcg
18061 ggaacttcga cgacaatgcc atcaatgact ttgccagcg tagccggtcc gtggtggggg
18121 acggcactgga gtttgggaac agctggaagc tctccccctc ctgcccggac gccctggac
18181 ccaaggaccc ctgcacggcc aacccccttcc ggcaagtcctg ggcccagaag cagtgcagca
18241 tcctccacgg ccccaccttc gccgcctgcc gctcccaggt ggggctctgg tcttggcagg
18301 cagggtctgg tggggatggc agttgcttcc ttcccgccga gaactgggtc ttctgggcag
18361 acagcagcgc tccaaggagg gtctgacca gtcccacggc acacagtcct ggatgtcagg
18421 tccaagtcc ggatctcccg tcagcccgac acctgtgcct cttgcccctg gcacgaagcc
18481 atcttggctg tttcccggcc actccttga ccacagcctc agtcacacc agaggctcac
18541 agggaggggc agcctctat gtggcccta gccaccctcc tctatgatcc ccagacctgc
18601 ccagtcctca gcacaaactg gaatgccagc ctggctcccc gctcagccag ggaggaatca
18661 gagatctgcc ctaagcagag acttccgaaa agcagtttcc tgactgggcg cggtggctca
18721 tgtctgtaat cccagcactt tgggacgctg aggcaggtgg atcacctgag gtcaggagtt
18781 tgagaccagc ctggtcaaca tggcgaaacc ccgtctctac aaaaaataca aaaatagccg
```

FIGURE 6G

```
18441 ggtgtggtgg tgtgtgcctg taatcccagc tactgggag  gctgaggcag gagaatcact
18501 tgaacctggg aagaggaggt tgcagtgagc caagatcgtg ccactgcact ccagcctaag
18561 caaaaagagt gagactctgt ctcaaaacaa aacaacaaaa aaccaaaaag cagtttcgtg
18621 tcatcttaag gaagacttga gtgcccactt aggcacacag catggtggct caggagctga
18681 gatgaggggc tggctaggg  gcagcagtgg gcatactcgc tcgtgggagg ccctgaagca
18741 ctctcatgtc ggccgccgct tgccctcttg agaaggcagc tggtgaccc  ttggaaggtc
18801 ctgtggcctg acaaagctga gcccaggttc agatggggcc tgggaggggt gtgggctgcc
18861 tggaggaagc aggcagcttc ccatggtcag gacgcattca cagctcagct cccggcgtgg
18921 ctgtctgga  aaggaagtga ccactccttc cttagtgcac attcactggg tgcctggaat
18981 agcctggcat gttctgggct cacccagtg  atcaggggac gaggctgacc ctcacagagc
19041 ttccagagga ggcagaaagg cggtgggtgc tgggtggtcg gatgctagga tgtggagggc
19101 cctggccggg ggttggttcc gctggaggga aggccccag  gtggaaagga ggccagtacg
19161 actcagcgg  agggaggtgg gggcgagggc agagggtaag caggggtgct atgctccaca
19221 tgggtttgaa acctgtgggc cacatgacca gatccacgtg atagaaagat ccaaagagca
19281 catgtgaagg caggcagatg ggcaggtgca taggtgggca ggtgcatagg tgggcagatg
19341 gacaggtggg cagatgggca ggtgggcagg gatataggtg gacgagggca caggtggct
19401 ggagaagtgc tgggcagct  cccatttggg gcacgctctg aggtattcca ggcccagga
19461 gctcagagag ctgccatggg gggtgttgaa atacagatgg ttccagcaac tggccctggg
19521 ccagccaccc cctggccggg ggggccattg tcccggctga gctgcacctt ggcctcaccc
19581 gcaggttgac tccaccaagt actacgaggc ctgcgtgaac gacgcgtgtg cctgcgactc
19641 gggtggcgac tgcgagtgtt tctgcacggc tgtggctgcc tacgcccagg cctgccagca
19701 cgcgggcctg tgtgtgtcct ggcggactcc ggacacctgc cgtgagtcgg gctctgtccg
19761 tggtgctgaa gggtggagct gctggggcag gggaggaggt gtggcagcct ccgaaggtgc
19821 attgacctgg gcctgagccg cacacagaca tcaacacgc  atgtgcctcc atgtgagtgc
19881 acaagttttct atgcacagag gaagacctgt gcaaaaccac cagacaggtt gcccagcat
19941 gagacagctc ctagggaca  agagttccaa gggcagggct ggggagtgga gggaagtg
20001 aggcaccacc cggccgaggc cctgcatgtc tgggacaagc ccgggtctgg ctctggggac
20061 accggccccc acgccggggg tagggcctgc cctgcacaac agggtgaggc tggtggcg
20121 cctccttagc ctctgccctc tgtgcccag  ccttgttctg tgacttctac aaccccacatg
20181 ggggctgtga gtggcactac cagccctgcg gggcaccctg cctaaaaacc tgccggaacc
20241 ccagtgggca ctgctggtg  gacctgcctg gcctggaagg tgaggggcag ccttccttgg
20301 atggagcctc ctctccttgg gttcccgagt gtacgtgggg gggcggggat cccaggggac
20361 gcggtgtagg ctcccgtaaa ctgcacaatg caagccttga gggcaggccc ctgctggctg
20421 gtgggggcg  gctactccct gcagcatgga gccccctggct ggagagacta aagggccctg
20481 gtgagtcttc tgctcaccct gccggcccta ggctgctacc cgaagtgccc acccagccag
20541 cccttcttca atgaggacca gatgaagtgc gtggcccagt gtggctgcta cgacaaggac
20601 ggaaactact atgacgtcgg tgcaagggtc cccacagcgg agaactgcca gagctggtga
20661 gggggtggga agcgggtggc gctggggggag cagggctggg gagcaggccc tgcaggctgc
20721 cccccaggcc ctcagctcgc ctctccccca cccctagtaa ctgcacacc  agtggcatcc
20781 agtgcgctca cagccttgag ggtaaggaag ggcgggggg  ttagtgggcc ggtgaaggct
20841 ggggccaggg gctcggaggc cctgggtgac tctgccggct ccatccccag cctgcacctg
20901 cacctatgag gacaggacct acagctacca ggacgtcatc tacaacacca ccgatgggct
20961 tggcgcctgc ttgatcgcca tctgcggaag caacggcacc atcatcagga aggctgtggc
21021 atgtcctgga actccagcca caaggccatt cacctccacc acggcctggg tcccccactc
21081 cacgacaagt aagcccctgc tggctctcct gaggcccagt actgtctggg tgacaaggag
21141 gacccctgg  gctcttagtg caggtgccct gtatggtagc gacagtccca atccactgac
21201 cttccgggct ctgtctaggg gtgcacggcc cctcaacacc ctgcgtgtct ccagggctc
```

FIGURE 6H

```
21661 cccacgaagc ctcagcacaa tgattgatgg gatacoccaa ggagacaata aagctttcct
21721 ggactccgtc ccatccctca gcacggccta tcccagccag ccagctccct caaggccagg
21781 ctgccaggcc ccagtccctc atgcagaaac ggctctaacc aaggctgagg caggcactgg
21841 ggtccccagt atcccacagg ggcaggccca gccctgggga aagggtcctc tggggcccct
21901 ccaccttgtg aggccaggac tggaggatgc tgagccagga cccctttccc atgcccttg
21961 caggccggc cctcccggtc tccacccgtgt gtgtccgcga ggtctgccgc tggtccagct
22021 ggtacaatgg gcacccgccca gagcccggcc tggaggcgg agactttgag acgtttgaaa
22081 acctgaggca gagagggtac caggtatgcc ccgtgctggc tgacatcgag tgccgggcgg
22141 cgcagcttcc cgacatgccg ctggaggagc tgggccagca ggtggactgc gacccgcatgc
22201 gggggctgat gtgcgccaac agccaacaga gtccccccgct ctgtcacgac tacgagctgc
22261 gggttctctg ctgcgaatac gtgcccctgtg gccoctcccc ggccccaggc accagccctc
22321 agccctccct cagtgccagc acggagcctg ctgtgcctac cccaacccag accacagcaa
22381 ccgaaaagac cacctatgg gtgacccga gcatccggtc gacggcggcc ctcacctcgc
22441 agactgggtc cagctcaggc cccgtgacgg tcacccctc ggccccaggt accaccacct
22501 gccagccccg gtgtcagtgg acagagtggt ttgatgagga ctacoccaag tctgaacaac
22561 ttggagggga cgttgagtcc tacgataaga tcaggccgc tggagggcac ttatgccagc
22621 agcctaagga catagagtgc caggccgaga gcttccccaa ctggaccctg gcacaggtgg
22681 ggcagaaggt gcactgtgac gtccacttcg gcctggtgtg caggaactgg gagcaggagg
22741 gcgtcttcaa gatgtgctac aactacagga tcc
```

FIGURE 10

```
(-1098)   gcg ccacggagca ttcaggacgc tggtgaccag ggagccagga
ggtgggagca tctgaggtgc aggtcacacg ggcaggaggt gtttgcaaga ggtattgcag
cgcggacgga gtgtcctgca gatgacgctg tctgtcctgt agatgacgct cgtcaaggag
gtttacbaca tagcccccgg gaagcccacc caacaccagc cggaggtgct aggcttctgc
ggctcccacc tgggcaggc ggaggacccc gggcaggtcc aggacccccc ggagcagctg
cttcctcaac cctgccaggg ttaatgagga ggcccagag tgaggtggag gccaaatggg
actcagggcc ggagcctctg gcctggctgg atcagggctg gcattggaca agcgcagctg
actcccgatg tgcatggcca ggagacactc tgggcctcag tttcccttg aatgtgaacc
ttgaaacaga tcagcccaga gacctccac ggtcttcaag gggctctggt cagctgggct
ggggtctctg gaaatagagc ctcctccagg gacccacca agccacccag actgagcatc
ctggccatgt gcatgcctga gctcagcagg agcctgccgg gctcccgtg ggctaagcag
tggtgggagg ggagctccag cctcgtgggc cctgcccggg cctcggggac ccatggtcag
tggctggggg tgctgcccag aggctgggat tcccttccag caggagccgc agtggggctg
agtgtgaggc aggctggctg accactgttt ccatggaccc tgcgtccaag gccagccctg
cctccagcg gctttgccat ctaggacggg tgccaggtgg ggtaggccct tctctcctt
ccgattctca gaagctgctg ggggtggggg cgtcctgggc ctcagggcac agagctgcaa
atccttcctg atccaggcct ctcccctgcc acagcccctc cccgagagca aacacacgtg
gctggagcgg ggaagagcac ggtgccctgc gtggcctggc ctggcttggg gccaaggctc
cctgctacat aagctggggc cccagggga gcaagcaccc gg  (+7)
```

FIGURE 11A

```
(-4169)   cctg gttgtgcctg tcgctcagtg ggccagggtc taagggctgt gaagactcaa
          catgccccca cctgctactt cttgaacacca ggcactggct ctgagacccc cgggccttgc
          tggacatctc cccaggtgta ctgggccagg ggacaggggc ctggccatcc caacaaccag
          gagcaagcag cccgtcacct gcccaggtcc ccgaggcccg gaacaccttc ctgctgggcc
          caccccagccc tggacctgtc ccgcttggtc acacgatggg accctcggcc catcagcagg
          tgagccccca ggagcgtgcg tctggctggg taaggcctcc accccaggag ttggggggcc
          cccgtgccag ggagcaggag gctgccgagg tggagggtcc cacacagcta ccactcccta
          tccccagcac agcctggggc ctggctctga gtacacatcc tgggcctgg cctctgagcag
          accaagagcc catccctgct ttgtgacccc ctgggctgtg cctgacaccc caggtgtcca
          gcgtggagct gggggcccagc tcagtgcctg ggagctgatg gaccctgggg cccggctcag
          tgcctggtgg ctgatggaca ctggggcctg gctcaaacct gcaccgctgt ggtcggggga
          ggggagggct gagccacgtg gggaaccccag cccccagtgac gactctttgc ggtggccaag
          cccttccaggt gtcccccagg gctgaggggc tgggcttggg gcagctggtg acagcagatg
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FIGURE 11B

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```

FIGURE 12

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ggctggaatt tgg   (+2738)
```

FIGURE 6 A

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Figure 4 D

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Figure 1F

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20581 ggggctgtga gtggcactac cagccctgcg gggcaccctg cctaaaaacc tgccggaacc
20641 ccagtgggca ctgcctggtg gacctgcctg gcctggaagg tgaggggcag ccttccttgg
20701 atggagcctc cctcccttgg gttcccgagt gtacgtgggg gggcggggat ccccagggac
20761 gcggtgtagg ctcccgtaaa ctgcacaatg caagccttga gggcaggccc ctgctggctg
20821 gtggggggcg gctactccct gcagcatgga gccctggct ggagagacta aagggccctg
20881 gtgagtcttc tgctcaccct gccggcccta ggctgctacc cgaagtgccc acccagccag
20941 cccttcttca atgaggacca gatgaagtgc gtggcccagt gtggctgcta cgacaaggac
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21061 gggggtggga agcgggtggc gctgggggag cagggctggg gagcaggccc tgcaggctgc
21121 cccccaggcc ctcagctcgc ctctccccca cccctagtaa ctgcacaccc agtggcatcc
21181 agtgcgctca cagccttgag ggtaaggaag ggccgggggg ttagtgggcc ggtgaaggct
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21421 atgtcctgga actccagcca caagcccatt caccttcacc accgcctggg tccccccactc
21481 cacgacaagt aagccctgcc tggctctcct gaggcccagt actgtctggg tgacaaggag
21541 gaccccctgg gctcttagtg caggtgccct gtatggtagc gacagtccca atccactgac
21601 cttccgggct ctgtctaggg gtgcacggcc cctcaacacc ctgcgtgtct ccaggggctc
21661 cccacgaagc ctcagcacaa tgattgatgg gatacccaa ggagacaata aagcctttcct
21721 ggactccgtc ccatcctca gcacggccta tcccagccag ccagctccct caaggccagg
21781 ctgccaggcc ccagtccctc atgccagaaac ggctctaacc aaggctgagg caggcactgg
21841 ggtccccagt atcccacagg ggcagggcca gccctgggga aagggtccct gggggcccct
21901 ccaccttgtg aggccaggac tggaggatgc tgagccagga cccctttccc atgccccttg
21961 caggccggc cctcccggtc tccacccgtgt gtgtccgcga ggtctgccgc tggtccagct
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22261 gggttctctg ctgggaatac gtgcgctgtg gccgctcccc ggccccaggc accagccctc
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22381 ccgaaaagac caccctatgg gtgacccga gcatccggtc gacggcggcc ctcacctcgc
22441 agactgggtc cagctcaggc ccgtgacgg tcacccctc ggcccccaggt accaccacct
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22561 ttggagggga cgttgagtcc tacgataaga tcaggccgc tggaggcac ttatgccagc
22621 agcctaagga catagagtgc caggccgaga gcttcccaa ctggaccctg gcacaggtgg
22631 ggcagaaggt gcactgtgac gtccacttcg gcctggtgtg caggaactgg gagcaggagg
22741 gcgtcttcaa gatgtgctac aactacagga tcc
```

FIGURE 10

```
(-1098)    gxxxxxxgcg  ccacggagca  ttcaggacgc  tggtgaccag  ggagccagga
ggtgggagca  tctgaggtgc  aggtcacacg  ggcaggaggt  gtttgcaaga  ggtattgcag
cgcggacgga  gtgtcctgca  gatgacgctg  tctgtcctgt  agatgacgct  cgtcaaggag
gtttaccaca  tagcccccgg  gaagcccacc  caacaccagc  cggaggtgct  aggcttctgc
ggctcccacc  tgggjcaggc  ggaggacccc  gggcaggtcc  aggacccccc  ggagcagctg
cttcctcaac  cctgccaggg  ttaatgagga  ggccccagag  tgaggtggag  gccaaatggg
actcagggcc  ggagcctctg  gcctggctgg  atcagggctg  gcattggaca  agcgcagctg
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ttgaaacaca  tcagcccaga  gacctcccac  ggtcttcaag  gggctctggt  cagctgggct
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tggctggggg  tgctgcccag  aggctgggat  tcccttccag  caggagccgc  agtggggctg
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ccttccagcg  gctttgccat  ctaggacggg  tgccaggtgg  ggtaggccct  tctctcccct
ccgattctca  gaagctgctg  ggggtggggg  cgtcctgggc  ctcagggcac  agagctgcaa
atccttcctg  atccaggcct  ctccctgcc  acagcccctc  cccgagagca  aacacacgtg
gctggagcgg  ggaagagcac  ggtgccctgc  gtggcctggc  ctggcttggg  gccaaggctc
cctgctacat  aagctgggjc  ccccagggja  gcaagcaccc  gg   (+7)
```

FIGURE 11 A

```
(-4169) ggtacccctg gttgtgcctg tcgctcagtg ggccagggtc taagggctgt gaagactcaa
        catgcccca  cctgctactt ctgaacacca ggcactggct ctgagaccc  cgggccttgc
        tggacatctc cccaggtgta ctgggccagg ggacaggggc ctggccatcc caacacccag
        gagcaagcag ccgtcacct  gcccaggtcc ccgaggcccg gaacaccttc ctgctgggcc
        cacccaaccc tggacctgtc ccgcttggtc acacgatggg accctcggcc catcagcagg
        tgagccccca ggagcgtgcg tctggcctgg taaggcctcc acccaggag  ttgggggcc
        cccgtgccag ggagcaggag gctgccgagg tggagggtcc cacacagcta ccactcccta
        tcccagcac  agcctggggc ctggctctga gtacacatcc tggggcctgg ccctgagcag
        accaagagcc catccctgct ttgtgacccc ctgggctgtg cctgacaccc caggtgtcca
        gcgtggagct ggggcccagc tcagtgcctg ggagctgatg gaccctgggg cccggctcag
        tgcctggtgg ctgatggaca ctggggcctg gctcaaacct gcacccgctgt ggtcggggga
        ggggagggct gagccacgtg gggaacccag cccagtgac  gactccttgc ggtggccaag
        ccctccaggt gtcccccaggg gctgaggggc tgggcttggg gcagctggtg acagcagatg
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        tccccattca tggcaggatt aaccccctc  gggctctgtg tggtccaggc cggccctttg
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        gtgccagcgg ccactggcgg gcgaggctgt tccagggtgg aggcgggggag ggttggacca
        caggcactga gcggggacag aggagctgcc tgagggtccc agctctgcca tggagaaaac
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        ccagtgggcc gccagcccc  atgaaggccg cgggcacggg ccgtggtcag ggagggcagg
        ggacaggcag tggggggccag cagggga gac actaggcttg gccccagcac ccaggtgggc
        atcggcttgt gagctggagc cgcgggcagg gaggcggggat gtcacgaggg cctggctaag
        gtgggagacc tgggcggggtg cgtcgggggg acgtcctgcag cagaggcctg ggcagcaggc
        acaccccctcc tgccagtgcg aggaacgagg cggcacagcg gcgggtagcc cccattgc
        ccagcctggc ctggagcagg caggaaggcc ggggagaggg gtctggctgg ggcctgggtg
        cagtcacagc cacgagccca ggggtgggga ctctggccca cccttcagac catgctcaag
        gcccactggc ccaggcatgc ccgccacccc ttccaccgtg ccgtgctgca ggggtctac
        cggcctggat gtgaaagaga gcttggagac cccagagacc tggaaccctt cagctttgga
        agtgacgtcg gtggggtggg tggggggagc acaggctctg gagtcccgga agtgagcggg
        gagctacgct gagatctggg agacccctg  ccccacccca ggtacagggc caggcagaag
        cccgaggtgt gccctgagtt aaagaaaccg tcacaaagaa caaagggaga aggcgggtcc
        cagcctgac  cacagccctc gcgctctgag gagccacctg ggggcttcag ccatgagggg
        tgacaggtgg caaaacgggc cagctccgtt cacgtcgctg tgcagctgtc tcggccctc
        catctccaga acgtcctcac attcccaagc tgaaaccctg tccccatgca acaccagtc
        accatcccct ctgccagccc ctgggcccca ccgtccacac tccgtctctg cgggtttcat
        gactccaggg gcagcacacg agtggcccct cctgcctttg tcctctgtgt ccacctgcct
        cactctgcac agtgtcccca gcttcccca  tggagcagcc tgggccagcc cctccttttc
        acggctgaac cgtattccac cgcacggatc agcctcacga tgctgaccca gtcctccgcc
        caggacaca  tgggcagctt ctgcccttty tcagtgatgc tgctgtggac atgggtgtgc
        aaatgtccct caggacccgc cttcagttct tctggggaca gacccagagt ggagttgctg
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        cttcctgtgt ttcttgatcc ccgccatcct attgagcgtg agacaggtca gaagctttga
        agatgggctt tcgtcttgtc ccagaaatcc cacctctaag aatttaactt cagaaagaca
        aacgcggggg agtcggtgca gggcccgtga cgcgggactgt gacgtaaata aaacaacaga
        cctggacacc accctagggt ccccatgggg ccggacgagg ccacccaccc cgacctggtg
        cttcctgcct ggcgtctgcg ccacggagca ttcaggacgc tggtgaccag ggagccagga
        ggtgggagca tctgaggtgc aggtcacacg ggcaggaggt gtttgcaaga ggtattgcag
```

```
cgcggacgga gtgtcctgca gatgacgctg tctgtcctgt agatgacgct cgtcaaggag
gtttaccaca tagcccccgg gaagcccacc caacaccagc cggaggtgct aggcttctgc
ggctcccacc tggggcaggc ggaggacccc gggcaggtcc aggaccccc  ggagcagctg
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atccttcctg atccaggcct ctcccctgcc acagcccctc cccgagagca aacacacgtg
gctggagcgg ggaagagcac ggtgccctgc gtggcctggc ctggcttggg gccaaggctc
cctgctacat aagctggggc ccccagggga gcaagcaccc gg   (+7)
```

FIGURE 12

```
            (-13) ccaggggga gcaagcaccc ggcccggctc cctccctgcc
cgtccccgtc ccccccaccg tgccagcccc caggatgggt gccccgagcg cgtgccggac
gctggtgttg gctctggcgg ccatgctcgt ggtgccgcag gcaggtaaga gcccccact
cggccccctc tcgatgctgt cttcacggcg ggggtctctg caggtcgctt gcctggagc
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ggctgga , (+2738)
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